



MRT news

newsletter of the MRT project

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RAIL PROGRESS

Track laying work for the MRT Sungai Buloh-Kajang Line is now in full swing following the completion of the elevated guideway and tunnels. See page 3 for the full story.



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from the desk of the CEO

DATO' SRI SHAHRIL MOKHTAR

MILESTONES ACHIEVED FOR THE MRT PROJECT

WELCOME to this edition of MRT News.

IT has been a very exciting third quarter for us at Mass Rapid Transit Corporation (MRT Corp) Sdn Bhd. During the quarter, we accomplished several major milestones which will certainly boost our spirits and morale in driving the Klang Valley MRT Project forward.

I am pleased to share that construction of the MRT Sungai Buloh-Kajang (SBK) Line is progressing very well and at a commendable pace.

As at 30 September 2015, the overall completion of the project was 72.25%. For the individual sections, the Elevated Works section was 64.57% complete while the Underground Works section was 81.76%.

In the last edition of *MRT News*, I highlighted the completion of tunnelling works for the SBK Line in April 2015.

In this edition, I have got more good news for you. MRT Corp and its contractors achieved another important milestone by completing the entire 40km elevated alignment of the SBK Line in August 2015.

With the completion of both the tunnels and the elevated guideways, the entire alignment can now be handed over to the next team – the Track Works contractor – for track laying.

This edition of *MRT News* focusses on this activity, giving a good insight on how the tracks are installed and the high technology used to ensure a smooth and quiet train journey.

Among other the activities for the Elevated Works section which are still continuing at the moment are the construction of elevated stations and multi-storey park and ride buildings. If you are driving along the alignment, you will see the MRT stations taking shape, many having their roofs installed.

Noise barriers are also being installed at various locations of the elevated guideway.

I am also proud to share that 16 of our four-car train sets have been delivered to our Sungai Buloh Depot as at the end of the third quarter. Currently they are undergoing dynamic testing at the

depot to ensure that they will be fit for service come December 2016 when Phase One between Sungai Buloh and Semantan Stations become operational.

The Mechanical and Electrical Systems Works which are moving at full swing at the moment include track works, signaling and train control, platform screen doors, automatic fare collection.

In the last edition of *MRT News*, we revealed the proposed alignment of the KVMRT Project's second line, the MRT Sungai Buloh-Serdang-Putrajaya (SSP) Line. The three-month mandatory public inspection exercise, where the proposed alignment was shown to the public through a roadshow involving 26 locations, ended in August 2015.

MRT Corp has forwarded all the 10,530 feedback obtained during the public inspection to the Suruhanjaya Pengangkutan Awam Darat as part of the process to obtain the final approval for the SSP Line's Railway Scheme. I am pleased to share that the proposed SSP Line received 90% support from those who gave their feedback.

I expect the Government to give us the final approval in October and this will enable us to proceed with tendering out the contracts for the construction of the SSP Line.

As with the SBK Line, MRT Corp has been appointed the developer and asset owner of the new line by the Government. This is a good step because it will enable MRT Corp to deploy its human capital, which had acquired considerable experience from handling the SBK Line, to the SSP line.

With all these activities on going, MRT Corp can look forward to many busy years ahead. I am confident that the people of the Klang Valley will be able to enjoy the MRT by the end of next year when operations for the first phase between Sungai Buloh and Semantan begin.

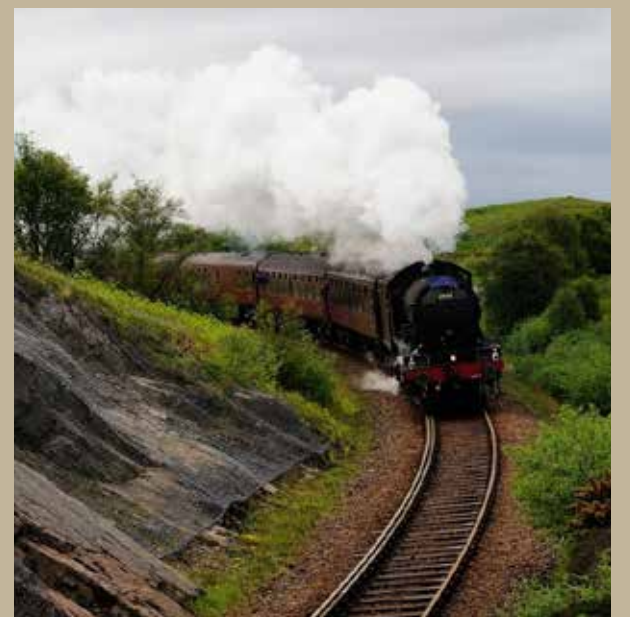
Thank you.

Shahril



DID YOU
KNOW THAT ...

THE Hogwarts Express Train used in the Harry Potter movies is an actual train that runs even today in Scotland. The line winds through gorgeous settings, including highland valleys and beside lochs.



Picture courtesy of Markus Bollmann (Flickr)

LAYING DOWN THE TRACKS

By Nik Haizan Nik Zambri



■ **COMPLETED:** View of the completed tracks with the emergency walkway leading to the Kwasa Sentral MRT Station.



■ **HEAVY LIFT:** Rails are being loaded and distributed on the viaduct.

AS the construction of the civil structure of the MRT Sungai Buloh-Kajang Line (SBK Line) such as the elevated guideway and tunnels reach completion, the next phase of work which is to lay the tracks for the MRT trains to run on is moving at full swing.

As at September 2015, 40km of the tracks had been constructed in the northern section whereas for the southern section, 28km of tracks had been laid. Track-laying work for the underground section would also be starting soon.

Track-laying works for the SBK Line first began at the Sungai Buloh Depot and gradually moved onto the mainline as sections of the elevated guideway were completed.

Mitsubishi Heavy Industries Ltd, is the track works contractor for the SBK Line. The first thing to be done once handover is completed is for a track survey to be conducted. This process is necessary to determine the exact locations for the tracks to be laid.

Of course, the design details for the tracks are already determined prior to construction at the design stage. Here, based on the design of the railway system as a whole, factors like ensuring that the turning radius of a curve is acceptable, that the rail can support the weight and speed of the trains, where crossovers and pocket tracks are to be located are determined.

The surveys that are conducted on site prior to and consistently throughout the construction period will ensure that the tracks which are laid follow the design accurately.

After the markings are drawn on the guideway, the contractor then starts with surface preparation. A scabbling machine is used to remove a thin layer of concrete and roughen the surface so that there is good bonding between the concrete of viaduct and the concrete for the tracks.

Next is the long rail distribution. Each piece of rail, called a “panel”, is 25 metres and the pieces of rail are welded together at the site to create

a 200m-long piece. These long rails are then distributed along the viaduct by pulling them on rollers. The rails used for the project are imported from Japan.

Once the rails have been brought to their required locations, rail and sleeper assembly can begin. Sleepers are concrete beams to which rails are fixed to form a track. They hold the rails upright and spaced to the correct gauge. For the SBK line, the gauge is the standard gauge of 1,435mm. The sleepers are installed every 600mm, measured from the centre of each sleeper.

Concreting works for the tracks will then take place next. This process can only be done at night because it will take about six to eight hours to pump the concrete from ground level onto guideway – which may require some road closures - and to allow the concrete to set.

When the concrete has set, all the 200m-long pieces of rail will be welded together to form one continuous rail, enabling passengers to enjoy a smooth and quiet ride inside the train.

As there are no gaps between the pieces of rail to allow for heat expansion, they have to undergo destressing. This process is vital because during the daytime, the direct heat from the sun will expand the rail and this may cause the train to derail. The rails will be stretched by a hydraulic tensor to a measured length equivalent to the stress-free temperature before it is clipped down onto the sleepers.

To minimize the noise generated from trains running on the rails, a Pandrol Vanguard fastener is used to clip the rail down. This fasteners were specially designed to reduce the vibration from a moving train, hence lowering airborne noise.

Noise barriers are also erected at specific areas along the guideway where the noise needs to be minimised.

Besides the two rails, a power rail also needs to be installed for electric power to be supplied to the trains. This rail, which is mounted on brackets and contained within a protective cover for safety

ANATOMY OF THE RAILWAY TRACK

1. Noise barrier	6. Rail head
2. Walkway	7. Clip
3. Derailment wall	8. Insulator
4. Sleepers	9. Screw spike
5. Power conductor rail	10. Baseplate

reasons, is assembled on either side of the tracks and is located slightly higher than the level of the track.

The power rail will be energised with 750 volts direct current and a train’s “collector shoe” which is located at the bottom side of a train will have to be in constant contact with the rail in order to receive power.

An emergency walkway is also built throughout the alignment. This walkway is usually in between the twin tracks to will allow the passengers to evacuate from a stranded train by crossing the walkway into another train on the opposite track which will be brought there during emergencies.

Alternatively, passengers can use the walkway to reach the nearest station or escape shaft if the train is stranded underground.

Once the tracks are energised with power supplied to the power rail, trains will be able to run along the tracks to enable them to undergo testing and commissioning. At this stage, all the systems will be collaborated to make sure that they are integrated with one another for it to function as one seamless rail network.

When testing and commissioning starts, the MRT Sungai Buloh-Kajang Line is just one step away from full operations.



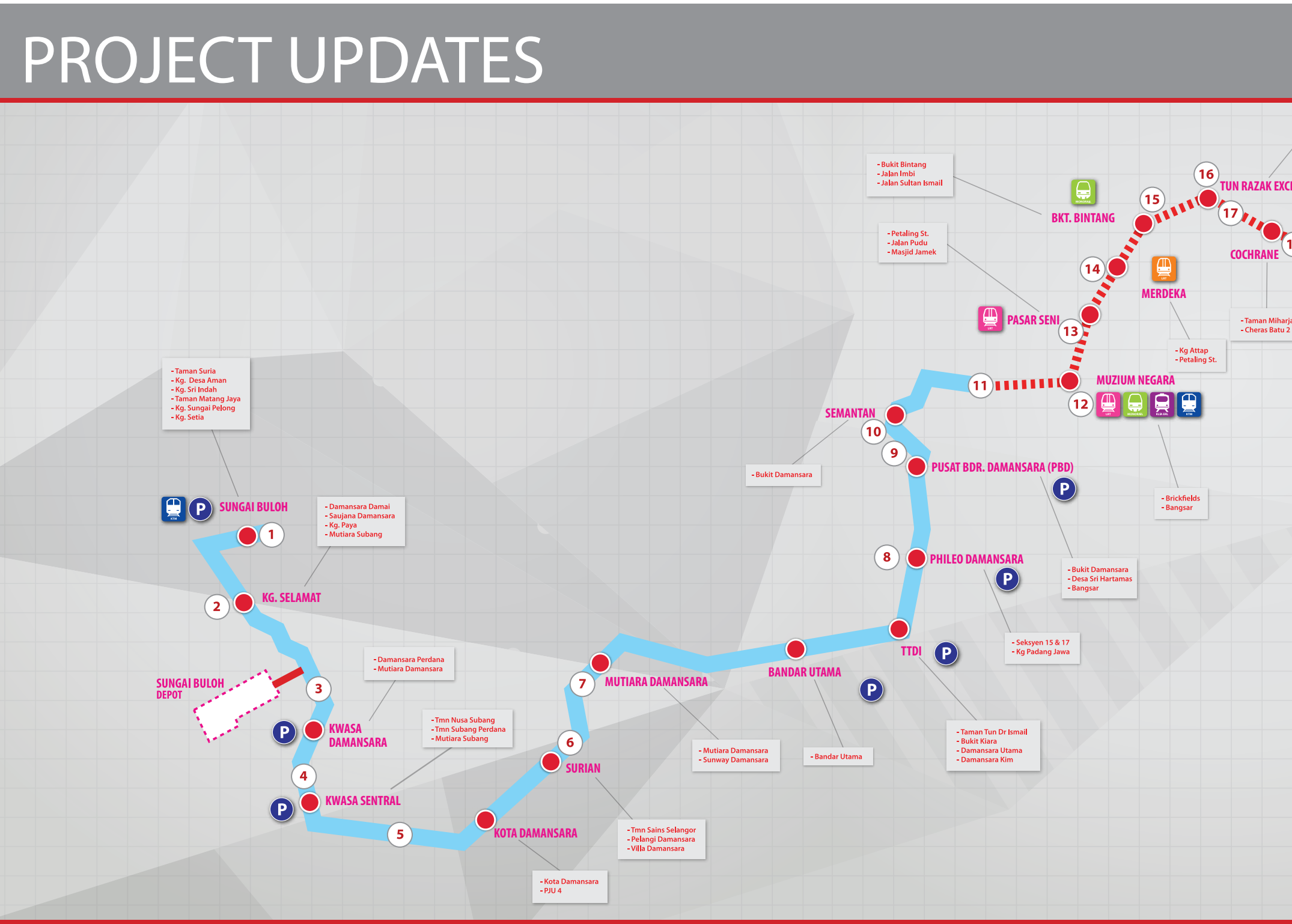
■ **DRAMATIC:** Welding of the rails in progress.



■ **POWER SUPPLY:** Workers installing the power or conductor rail to the right side of the track.



■ **IN PROGRESS:** A worker assembling the rebar for formwork for the concreting process.



1
LINKAGE
The common concourse of the Sungai Buloh KTM Station (red roof) and the Sungai Buloh MRT Station (right) taking shape.



2
GOOD PROGRESS
The roof of the Kampung Selamat Station installed.



3
LAID OUT
Track-laying work on the guideway along Jalan Subang-Sungai Buloh at various stages of completion.



4
ATTRACTIVE: Architectural works for the Kwasa Sentral Station being done.



5
COMPLETED
Aerial view of the completed MRT guideway heading towards Persiaran Surian with tracks laid.



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NORTHERN END
View of the Semantan Portal, the northern end of the MRT tunnel, where the portal building is being constructed.



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INSIDE THE STATION
View of the platform level (below) and concourse level (above) of the Muzium Negara Station.



13
STRUCTURES DONE
View of the staircase from the platform level to the concourse level of the Pasar Seni MRT Station. The troughs to the left and right are for escalators.



14
LAST SLAB
Rebars for the roof slab of the Merdeka Station being readied for concreting. This is the final slab to be cast before the backfilling is done over the station.



15
TUNNEL OPENING
View of the opening of the tunnel for Kajang-bound trains at the Upper Platform of Bukit Bintang Station.



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INSTALLED
Aerial view of the construction of the Taman Connaught Station with the roof installed.



22
FULL SWING
Construction of the Taman Connaught Station in progress.



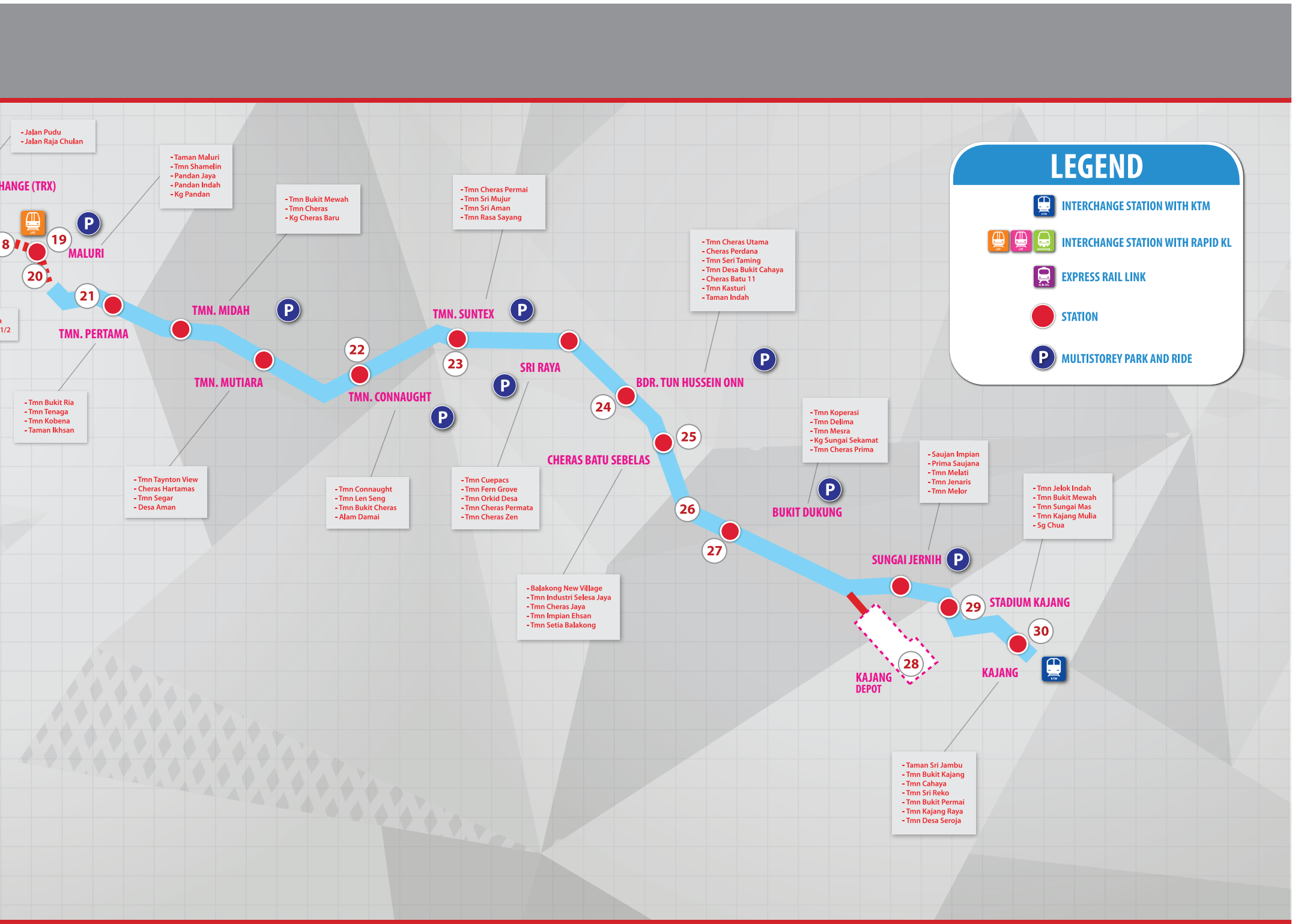
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ISLAND PLATFORM
View of the construction progress of Taman Suntext Station which has an island platform.



24
ONGOING WORK
Construction at the Bandar Tun Hussein Onn Station in progress.



25
COMING UP
The Cheras Batu Sebelas Station under construction.



6

TAKING SHAPE
The Surian Station near Dataran Sunway under construction.

7

IN PROGRESS
Track works in progress on the guideway near Mutiara Damansara Station.

8

PEDESTRIAN LINKWAY
View of the Phileo Damansara Station with the pedestrian bridge structure over the SPRINT Highway installed.

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ACCESS
The staircase, escalator and lift for one of the entrances to the Pusat Bandar Damansara Station being constructed.

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ALMOST DONE
Evening view of the Semantan Station.

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ONE MORE TO GO
View of the formwork for the construction of the roof slab of the Tun Razak Exchange Station being done on the Upper Concourse Level.

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COMING UP
Construction of the wall of the Escape Shaft No 3 at the Kampung Pandan Roundabout in progress.

18

FITTINGS GOING IN
View of the platform level of the Cochrane Station with building services equipment such as air conditioning ducts being fitted in.

19

TAKING SHAPE
Construction of the staircase from the platform level to the concourse level of the Maluri MRT Station in progress.

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PORTAL BUILDING
View of the portal building at the Maluri Portal, the southern end of the MRT tunnel, under construction.

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SPECIAL SPAN
View of the completed span of the MRT guideway over the Cheras-Kajang Highway with tracks already laid.

27

GOOD PROGRESS
View of the Bukit Dukung Station (right) having its roof structure installed. To the left is the construction of the multi-storey park and ride building.

28

VAST
Aerial view of the Kajang Depot.

29

GOOD LOCATION
View of the Stadium Kajang Station being constructed.

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ALMOST READY
View of the Kajang Station multi-storey park and ride building (right) which is already partially in use.

STEPPING UP ON SAFETY FOR THE MRT PROJECT

By Rizal Azli Kamal Redzuan

THE Klang Valley MRT Project will see an enhancement in occupational safety and health (OSH) practices with the setting up of the KVMRT Training Centre in Sungai Buloh for training all project personnel.

The centre was set up jointly by Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) and MMC Gamuda KVMRT (PDP SSP) Sdn Bhd, the Project owner and the Project Delivery Partner for the MRT Sungai Buloh-Serdang-Putrajaya Line (SSP Line), respectively.

A new enhanced OSH training programme will also be jointly developed with CIDB Holdings Sdn Bhd and the National Institute of Occupational Safety and Health (NIOSH).

On 28 September 2015, MRT Corp, MMC Gamuda, CIDB Holdings and NIOSH signed a Memorandum of Understanding (MOU) to formalise their roles in this initiative.

The signatories were MRT Corp Chief Executive Officer Dato' Sri Shahril Mokhtar, MMC Gamuda

Director Dato' Azmi Mat Nor, CIDB Holdings Chief Executive Officer Sr Abdul Latif Hitam and NIOSH Executive Director Ir Rosli Hussin.

The signing ceremony, which was held at the centre, was witnessed by Works Minister Dato' Sri Fadillah Yusof and CIDB Holdings Chairman Dato' Sri Prof Ir Dr Judin Abdul Karim.

Among the schemes to be introduced under the enhanced OSH training programme are the Safety Passport Scheme, Master Trainer Scheme and the Safety, Health and Environment Performance Assessment Scheme.

Meanwhile, Fadillah also officially launched the centre during the event. He signed a plaque to mark its official opening.

The minister and other visitors were then brought on a tour of the exhibits and other facilities of the training centre. The exhibits included examples on the proper method of erecting scaffoldings, proper installation of safety barriers and proper storage of fuel.



INFORMATION: MRT Corp Standard and Compliance Director Syed Mahdhar Syed Hussain briefing Works Minister Dato' Sri Fadillah Yusof and the other visitors on tracklaying at one of the exhibits at the KVMRT Training Centre.



YES TO SAFETY: (from left) MMC Gamuda Director Dato' Azmi Mat Nor, MRT Corp CEO Dato' Sri Shahril Mokhtar, Works Minister Dato' Sri Fadillah Yusof and other visitors giving the thumbs up to safety at one of the exhibits at the KVMRT Training Centre.



SEALED: The MOU being signed by (from left) NIOSH Executive Director Ir. Rosli Hussin, MRT Corp CEO Mr Dato' Sri Shahril Mokhtar, MMC Gamuda Director Dato' Azmi Mat Nor, CIDB Holdings CEO Sr Abdul Latif Hitam, and witnessed by Works Minister Dato' Sri Fadillah Yusof (in suit) and CIDB Holdings Chairman Dato' Sri Prof. Ir. Dr Judin Abdul Karim (Fadillah's left).



IT'S OFFICIAL: Works Minister Dato' Sri Fadillah Yusof signing the plaque marking the opening of the KVMRT Training Centre.

PDP AGREEMENT FOR SSP LINE SIGNED

By Amalina Ghazali



SEALED: (from left) Gamuda Bhd Executive Director Dato' Azmi Mat Nor, MMC Corporation Bhd Group Managing Director Dato' Sri Che Khalib Mohamad Noh, MRT Corp CEO Dato' Sri Shahril Mokhtar, Gamuda Bhd Deputy Managing Director Dato' Paul Ha, MRT Corp Project Director SSP Line Encik Amiruddin Ma'aris and MRT Corp CFO Encik Mohd Hairul Abdul Hamid pose for a picture after the signing of the agreement.



SIGNING OFF: MRT Corp Chief Executive Officer Dato' Sri Shahril Mokhtar (centre) signing the PDP agreement. With him are MMC Corporation Bhd Group Managing Director Dato' Sri Che Khalib Mohamad Noh (left) and Gamuda Bhd Deputy Managing Director Dato' Paul Ha (right).



EXCHANGING VIEWS: Gamuda Bhd Executive Director Dato' Azmi Mat Nor, MMC Corporation Berhad Group Managing Director Dato' Sri Che Khalib Mohamad Noh, Gamuda Berhad Executive Director Dato' Ir. Paul Ha and MRT Corp Chief Executive Officer Dato' Sri Shahril Mokhtar, having a chat after the signing ceremony.

MASS Rapid Transit Corporation Sdn Bhd (MRT Corp) formalised the appointment of MMC Gamuda KVMRT (PDP SSP) Sdn Bhd as the Project Delivery Partner (PDP) for the MRT Sungai Buloh-Serdang-Putrajaya Line with the signing of the PDP agreement on 13 July 2015.

MRT Corp Chief Executive Officer Dato' Sri Shahril Mokhtar signed on behalf of MRT Corp while MMC Corporation Berhad Group Managing Director Dato' Sri Che Khalib Mohamad Noh and Gamuda Berhad Deputy Group Managing Director Dato' Ir Paul Ha, signed on behalf of the PDP.

Both Che Khalib and Ha are Directors of MMC Gamuda KVMRT (PDP SSP) Sdn Bhd.

Witnessing the signing was MRT Corp Project Director for the SSP Line Encik Amiruddin Maaris. Also present at the event were MRT Corp Chief Financial Officer Encik Mohd Hairul Abdul Hamid, and Gamuda Bhd Executive Director Dato' Azmi Mat Nor.

The signing was held at MRT Corp Corporate Headquarters.

Shahril said the signing of the PDP Agreement was an historic milestone for the development of the SSP Line, the second line of the Klang Valley MRT Project.

"I am very happy that we have finally concluded negotiations and sealed the PDP Agreement.

"MRT Corp and MMC Gamuda have already forged a good partnership with each other after working together for the MRT Sungai Buloh-Kajang Line (SBK Line). I am glad we will now continue to work together to deliver the SSP Line to the rakyat," he said, adding that the terms of the agreement had also been agreed to by the Ministry of Finance and the Attorney-General's Chambers.

Under the agreement, MMC Gamuda as PDP will be responsible for the delivery of the SSP Line within the agreed target cost and target delivery date.

On top of the above two Key Performance Indicators, which were similar to those for the MRT SBK Line, four additional KPIs were included in the PDP Agreement.

They were ensuring compliance with Safety, Health and Environment requirements; compliance with agreed quality standards; timely response to public complaints and implementation of stakeholder management.

"I can see that the PDP Agreement for the SSP Line is much more refined and an improvement from that for the SBK Line.

"Both parties have learnt a lot from the partnership for the SBK Line and I am happy to see that the learnings have been incorporated into this new Agreement," Shahril said.

HAPPENINGS



AN INSIGHTFUL VISIT: Malaysian and foreign civil servants, participants of the Economic Planning And Management Course (EPM) run by the Malaysian National Institute of Public Administration (INTAN), pose for a picture when they visited the MRT Information Centre on 9 September 2015.



ALL ABOARD: Visitors from the Johor Army Institute giving their thumbs up for the MRT Project during a visit to the MRT Information Centre on 1 October 2015.



EXCHANGE OF KNOWLEDGE: MRT Corp Director Operations and Assets Management Encik Mahmood Abdul Razak (second from left) and Director Underground Tunnel Mr Blaise Pearce (third from right) hosting representatives from the Construction Industry Council of Hong Kong at MRT Corp Corporate Headquarters on 21 August 2015.



INTERNATIONAL VISITORS: MRT Corp Director of Mechanical and Electrical Systems Mr Tarenjit Singh Khella (third from right) with the delegates of the SMART Cities Conference 2015 during their visit to the Sungai Buloh Depot on 10 September 2015.

FUN-FILLED FINALE FOR SELFIE CONTEST

By Amalina Ghazali and Ean Yaacob

IT was a noisy and fun-filled afternoon for the winners of the *Get On Board with #MRTSSPLINE 'Take a Selfie' Contest* when they gathered at the prize-giving ceremony on Saturday, 5 September 2015 at the Sime Darby Convention Centre in Kuala Lumpur.

The 10 winners were selected among 538 entries of the contest. In order to win, the contestants had to take selfies at the MRT Sungai Buloh-Serdang-Putrajaya Line (SSP Line) Public Inspection Roadshow booth and post their selfies on either Facebook or Instagram.

The contest ran from 6 August until 14 August 2015 to coincide with the SSP Line Public Inspection, which was held between 15 May 2015 and 17 August 2015, to encourage members of the public to visit the booths and give their feedback on the proposed alignment.

The prize giving ceremony began with a welcome note by Mass Rapid Transit Corporation Sdn Bhd's Director of Operations and Assets Management Encik Mahmood Abdul Razak. He thanked the winners for taking part in the contest and by virtue of their participation, had helped create awareness about the SSP Line Public Inspection Roadshow.

The winners were then invited one-by-one onstage to collect their iPad Minis. However, before each winner could lay their hands on their prizes, they were subjected to cheeky interviews by the Master of Ceremonies Encik Hardy Arbi.

Once everyone had received their prizes, the winners gathered onstage to take a "wefie".

One of the winners, Encik Muhamad Afiq Aziz said he was extremely pleased to have won an iPad Mini.

"This iPad Mini is exactly what I needed for my three years in Scotland," he said. Muhamad Afiq had flown in from Kota Bharu to accept his prize. He was going to fly off to Scotland to pursue his doctorate in Biomedical Science, the following week.



■ **THE WINNERS:** Puan Lily Shazreen Abdul Rahim (left) receiving her iPad Mini as one of the Selfie Contest winners from MRT Corp Director Operations & Assets Management, Mr Mahmood Abdul Razak (right).



■ **THE FORCE IS WITH ME:** Encik Muhammad Shahrul Roaslan showing his stormtrooper selfie.

His winning entry involved him and his friends posing in various positions in front of one of boards of the booth. All of his friends joined him at the prize-giving ceremony.

Winners Encik Azuan Effendy Zairakithnaini and Puan Lily Shazreena Abdul Rahim were a husband and wife team, where each posted a winning entry. They went all the way to Alamanda Shopping Mall in Putrajaya from their home in Bukit Persekutuan, Kuala Lumpur to perform their selfie poses, bringing along props such as slogan cutouts, a tooth brush, a shower cap and even a water scoop.

"I told my wife if we were to participate, we must do the extreme. That's my style. If I were to do something, I will really do it," Azuan said.



■ **THE WINNERS:** A "wefie" with all the winners.

Azuan Effendy's comical selfie was captioned, "Late riser? No worries.. U won't be late to work with MRT," and depicted himself dressed in a white t-shirt and "kain pelikat", donning a shower cap, complete with a towel, toothbrush and toothpaste – as if he had just emerged from his morning bath.

Lily Shazreena too went the extra mile for her selfie post, but in a more conventional way where she made cut outs with creative hashtags such as #travellingmadeeasywithMRT and #kipidabdongibabMRT.

Creativity was the winning factor for Encik Syahizan Amir Abdul Wahab who played on the similarity between MRT and Mr. T, the star from the 80s TV show The A-Team. His selfie had him holding a mobile phone picture of Mr T, with the word "MR.T" all in capital letters.

"This will be a present for my wife's birthday", Syahizan said upon accepting his iPad Mini.

WINNERS OF THE #MRTSSPLINE 'TAKE A SELFIE' CONTEST

- Encik Muhammad Afiq Aziz
- Encik Wan Ahmad Amsyar Wan Yusoff
- Encik Ahmad Daud Abdul Manan
- Puan Lily Shazreena Abdul Rahim
- Encik Azuan Effendy Zairakithnaini
- Mr Vijaya Ratinam
- Puan Nurul Atika Mohd Esa
- Ms Tan Chew Hua
- Encik Shahizan Amir Abd Wahab
- Encik Muhammad Shahrul Roaslan

OVER 10,000 FEEDBACKS RECEIVED DURING SSP LINE PUBLIC INSPECTION

By Leong Shen-Li

A TOTAL of 10,530 feedbacks were received during the Public Inspection exercise for the proposed MRT Sungai Buloh-Serdang-Putrajaya Line which was held from 15 May 2015 to 17 August 2015.

The feedbacks were received by Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) through various channels which were made available to the public during the three month period.

The Public Inspection is a requirement under Section 84 of the Land Public Transport Act 2010, where the proposed alignment and other relevant information of any new railway proposal must be displayed to the public for them to give their feedback or lodge objections.

The vast majority of the feedback – over 80% - were given by visitors at the MRT SSP Line Roadshow which was organised as part of the Public Inspection exercise. An estimated 40,000 people visited the 26 booths of the roadshow during the Public Inspection period.

The booths, which included shopping complexes, local authority offices, community centres and even a hospital, displayed information about the Project. Information officers were also at hand to answer any queries.

Visitors wishing to provide feedback could fill in an online feedback form which was made available on laptops or using portable tablets held by the staff manning the booths.

The online form could be filled immediately at the booth or later after the respondent had left the booth via an email link which is sent to them.

The remaining 20% of feedback were received from respondents via the SSP Line Internet

microsite. Besides the roadshow, MRT Corp had also set up a microsite which contained all information that was available at the booths.

There were also a small number of letters containing feedback received by MRT Corp.

Besides seeking general feedback, the form also asked whether the respondent supported the proposed SSP Line, and whether he or she would use the new line when it began running.

Ninety percent of the respondents said they were supportive of the proposed SSP Line. As for using the future SSP Line, 87% of the respondents said they might use the line when it was operational.

Besides the two questions, respondents were also encouraged to give feedback on anything related the proposed Project.

Most of the feedback received were related to the location of the proposed alignment and stations. The majority of the respondents agreed with the proposed alignment and station locations. There were of course also a few objections to certain parts of the proposed alignment and a few station locations.

Other issues raised included the need for good facilities to support the system such as parking at stations, feeder buses, while others touched on traffic congestion caused by construction as well as at stations when the system was operational, and also on safety concerns during construction.

All feedback received were compiled and handed over to the Suruhanjaya Pengangkutan Awam Darat (SPAD) as part of the process of obtaining the final approval for the SSP Line.



■ **GIVING FEEDBACK:** Visitors giving their feedback on the SSP Line at the booth.



■ **LISTENING INTENTLY:** A visitor to the booth listening to an Information Officer explain details on the display materials.



■ **THROUGH MY CONSTITUENCY:** Serdang Member of Parliament Dr Ong Kian Ming checking the proposed alignment of the SSP Line which runs through the Serdang Parliamentary Constituency.



■ **VIEWPOINT:** Seputeh Member of Parliament Ms Teresa Kok keying in her feedback at a booth. The SSP Line also runs through the Seputeh Parliamentary Constituency.

PRIME MINISTER VISITS SUNGAI BULOH DEPOT

By Rizal Azli Kamal Redzuan



■ **ALL ABOARD:** Prime Minister Dato' Sri Mohd Najib Tun Abdul Razak at the front window of the MRT train.

PRIME Minister Dato' Sri Mohd Najib Tun Abdul Razak made his fourth site visit to the MRT Project, this time touring the Sungai Buloh Depot.

This visit, which took place on 11 November 2015, demonstrated his commitment towards ensuring that the MRT Project was at its desired progress level which would enable it to be fully operational by July 2017.

Previously, Najib had visited the Cochrane Launch Shaft site twice, and Tun Razak Exchange Underground Station site.

Upon his arrival at the depot, the Prime Minister was received by MRT Corp Chairman Tan Sri Dr Ali Hamsa and MRT Corp CEO Dato' Sri Shahril Mokhtar.

Najib was immediately taken to the Rolling Stock Maintenance Workshop and was shown the MRT trains that were being tested.

MRT Corp Project Director Sungai Buloh –Kajang Line Mr Marcus Karakashian led the Prime Minister onto one of the trains. Throughout the visit, Karakashian briefed him on the important features of the train and the Project as a whole.

Speaking to the media at the end of the visit, Najib said he was impressed with the progress of the Project.

“What we have planned is now materializing. This means our target for the first MRT line to begin operating at the end of 2016 can be achieved,” he said.

The Prime Minister added that the Project had created jobs for locals and also technology transfer to local companies.

“We see a lot of employment and opportunities for our people who have the qualification. Being involved in the development of the MRT should be valuable experience for them.”

At that point of the Prime Minister's visit, 19 four-car train sets had been delivered to the depot by the Electric Train Contractor, a joint venture by Siemens AG, Siemens Malaysia Sdn Bhd and SMH Rail Sdn Bhd.

The trains are the first to be fully assembled in Malaysia by SMH Rail in their train assembly plant in Rasa, Hulu Selangor.

The Sungai Buloh Depot will be the largest train depot in Southeast Asia. The depot will be where the 58 trains of the MRT Sungai Buloh-Kajang Line will be parked when off service. Trains will also undergo maintenance and repairs at the depot.



■ **THERE IT IS:** Prime Minister Dato' Sri Mohd Najib Tun Abdul Razak having a look at the route map inside the train.



■ **WARM GESTURE:** Prime Minister Dato' Sri Mohd Najib Tun Abdul Razak (middle) accepting a memento from MRT Corp Chairman Tan Sri Dr Ali Hamsa (third from right) being flanked by MRT Corp CEO Dato' Sri Shahril Mokhtar (second from left) and Suruhanjaya Pengangkutan Awam Darat (SPAD) Chairman Tan Sri Dato' Seri Dr Syed Hamid Albar (second from right).



■ **YOUR FUTURE TRAIN:** The MRT Train undergoing testing which was shown to the Prime Minister during his visit to the Sungai Buloh depot.

SBK LINE'S ELEVATED GUIDEWAY COMPLETED

By Leong Shen-li

IT was late into the night of 18 August 2015 when Launch Gantry 3 sprang into action between Piers SE42 and SE44 beside Jalan Sultan Abdul Halim (Jalan Duta).

In no time, all 14 segmented box girders (SBGs) had been lifted and aligned in a row mid-air, with the grooved side of each unit fitting perfectly into the next, to form a beam. The beam was then lowered onto the two piers.

Of course, each SBG would still have to be supported by the launch gantry until they were stressed by tendons running through them. This would be done over the following days.

But in the early morning of 19 August 2015 when the beam rested on the piers, everyone at the site knew that a major milestone for the MRT Sungai Buloh-Kajang (SBK) Line had been achieved - the entire 41.5km of elevated guideway for the SBK Line was now complete.

The elevated guideway for the SBK Line comprises two sections of almost equal length, the north section from Sungai Buloh to the Semantan Portal, and the southern section from the Maluri Portal to Kajang.

Separating the two elevated sections is the 9.5km underground section.

Earlier in April, all tunnel excavation for the underground section had been completed with the final breakthrough of the tunnel boring machine at Pasar Seni MRT Station site.

With the final span of the elevated guideway now erected, the SBK Line's entire path - elevated and underground - was complete. This would allow for track-laying works, which had been carried out as sections of the guideway became completed, to proceed unhindered.

More than 16,800 SBGs were used to build the entire elevated guideway. Most of the SBGs used were for double tracks with a width of 9.8m and length of 3m. Each weigh about 30 tonnes.

There were also SBGs for single tracks, used mostly for the spur lines into the depots, and on approaches to stations with island platforms. These were 6.06m wide and 3m long, and weigh 20 tonnes.

The spans which were constructed using SBGs and launch gantries were called “standard spans” which had a length of 39.8m between two piers.

There were also “special spans”, any span which was longer than the standard span. These were usually spans which had to go over major highways, railway tracks and rivers.

There were 22 special spans constructed for the SBK Line, crossing major highways like the North-South Expressway, New Klang Valley Expressway, Damansara-Puchong Expressway, SPRINT Highway and Cheras-Kajang Highway, as well as rivers and railway tracks in Kajang.

To support the elevated guideway, over 1,300 piers were built. These piers were designed to ensure that they could support the weight of the guideway together with the trains that would run on them. They also had to be able to withstand the force of strong gusts of wind.

The piers also had to ensure that the gradient of the guideway was not more than 3%. As the SBK Line ran over several steep slopes, such as along Jalan Semantan, the piers at these locations were required to be as tall as 30m to maintain the required gradient of the guideway.

Construction of these piers were extremely challenging as the alignment often ran beside and even in the middle of busy roads, with little space for machinery. There was also the need to mitigate any risk posed to road users from construction activities.

Work to build the first piers began in 2012 in Packages V5 and V6, and the first span was successfully erected in April 2013 in Package V6.



■ **COMPLETED:** Guideway construction along Jalan Sultan Abdul Hamid (Jalan Duta) in June (left) and August (right).



■ **LAST PIECE:** The final span to be erected for the MRT Sungai Buloh-Kajang Line's elevated guideway.